

WA-Trans Steering Committee Meeting Notes October 23, 2006

Attendees:

Member	Association	Representing
Michaellyn Garcia	Census Bureau	US Bureau of Census
Holly Glaser	WSDOT Geographic Services	WA-Trans (GIS Analyst)
Tami Griffin	WSDOT Geographic Services	WA-Trans (Project Manager), Facilitator
Jason Guthrie	Lincoln County	County & City Governments
Wendy Hawley	Census Bureau	US Bureau of Census
Michael Leierer	WSDOT Geographic Services	WA-Trans (Assistant Project Manager/ Technical Lead)
Mac McKay	WA Department of Natural Resources	WADNR and Natural Resource Business Needs
George Spencer	WSDOT Geographic Services	WSDOT Geographic Services
Ken Stallcup	WSDOT Contractor	WA-Trans Technical Writer
Cathy Udenburg	Walla Walla County	County & City Governments
Ian Von Essen	Spokane County GIS	E-911
Pat Whittaker	WSDOT Transportation Data Office	WSDOT Transportation Data Office
Tim Young	Washington Department of Fish and Wildlife	Natural Resource Organizations

Not Attending:

Member	Association	Representing
Tareq Al-Zeer	WSDOT	WSDOT
Sam Bardelson	US Geological Survey Washington Liaison	The National Map
Michelle Blake	WSDOT GIS Data Administrator	WSDOT
Chuck Buzzard	Pierce County GIS	West side local government
David Cullom	WA. Utilities & Transportation Commission	Rail And Utility Needs
Kristina Evanoff	Sound Transit	Transit Needs
Jerry Harless	Puget Sound Regional Council	MPO's, RTPO's
David Koch	WA Department of Information Service	Information Services Board – Project Oversight
Kathy O'Shea	Country Road Administration Board	County Road Administration Board
Dave Rideout	Spokane County Engineers Office	East side local government
Lurleen Smith	Mason County Public Works	West side local government
Elizabeth Stratton	WSDOT	Freight Interests

- Introductions, Status Questions, Time Tracking, Action Item Review
- Return on Investment Study Continuation Plans and Requests for Help
- Options for Accelerated Implementation
- Metadata
 - Strategies
 - Disclaimers
- Report on Conflation of Mobility Data for King County
- Outputs of Multiple Descriptions and Geometries
- Jurisdictions With No Data: Reports and Plans
- Action Item Review and Close

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Introductions, Status Questions, Time Tracking, Action Item Review

The video-conferencing worked well and was ready 10 minutes early. Everyone was very appreciative!

Introductions:

- Mac McKay – Transportation and Hydrography Data Steward for DNR.
- Michaellyn Garcia – replacing Wendy Hawley as our Census rep. This is Wendy's last meeting. We will miss you Wendy!
- Holly Glaser – new WA-Trans GIS Analyst.
- Tami is still working with Bill Kaiser of the US Forest Service to identify someone to participate.

Action Items:

- City code crosswalks are being added to the database. (Michael)
- Pend Orielle County – A survey went out for regional data information (forest service, tribes, etc.) and aquired data. They are building a spreadsheet to look at data and see how it fits together. They were able to aquire WADNR photos for parcel information to create a common base. The main focus right now is on the Public Lands Survey System (PLSS). They aquired DNR PLSS. They will try to conflate existing data so it all fits together. They are very interested in next pilot as more representative of what they may need. They want the transportation data to fit WA-Trans. The grant is to move data to TNM. So it doesn't have funding to create new data but doesn't say you can't take old data and refit it to work. First they will work on control and then transportation and boundary. Holly has been working on conflation and has some tools identified if there is interest. (Ian, yes he is interested in tools!)
 - **Action Item** – Holly provide Ian with conflation tool information.
- Agreement point process - Chuck Buzzard provided his information. King and Pierce determined Pierce has most accurate data and established points based on Pierce data and then King county adjusted to that. The driveways a big issue and are establishing second order points that King can use and Pierce can ignore. Pierce time investment was 80 hours time. We still have to get King County investment of time. (Ken) We have determined the database is ready to handle agreement points at this time. (Michael)
 - **Action Item** – Ken interview Jason Guthrie (by e-mail/phone) at some point to document his Agreement Point experiences.

Return on Investment Study Continuation Plans and Requests for Help

FGDC funding another trip by GITA (Geographic Information Technology Association). They will be out next week and mid-November. Tami will be making calls to ask for interviews with people. It

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will be focused non-WSDOT benefits. If we can't schedule enough meetings we will have to reschedule. Please work with Tami to schedule time for this.

Options for Accelerated Implementation

George Spencer came to share about implementation alternatives. He asked Tami at the July meeting to bring up this topic and felt it wasn't covered quite as envisioned. It was called "Simpler Version of WA-Trans". But really what he is looking for is implementation options that allow for a reduced scope implementation that could be an intermediate deliverable. George identified two reasons for doing this:

1. There is a lot of activity and interest at WSDOT from upper management regarding GIS and WA-Trans is part of that. But that is leading to demands to get it done sooner. Also the Cartography and GIS Section has a need to modernize our local data information to fill a need. We have a CAD based local roads layer. This does not meet our needs & hard to maintain. Will require resources to get it in GIS. George wanted any work done on this to better position us for WA-Trans and move it along faster.
2. WSDOT is providing significant support for WA-Trans, first with Tami and the Pooled Fund Study (\$90,000 over three years) and now with Holly.

Tami and George are working together to restate the business case for WA-Trans at WSDOT in terms needed by present management. George is seeing more interest and better understanding but also more demands.

What George is proposing involves getting a statewide deliverable of some sort sooner (not necessarily simpler). He states that:

- Assume Puget Sound Pilot Phase I and One-Road Pilot are complete,
- Assume pilots have confirmed the WA-Trans data model meets phase I roads requirements,
- Assume translators are in place,
- Assume a process is in place for establishing and maintaining agreement points,
- The concerns expressed at the July meeting regarding testing and completing pilots is valid,
- An iterative approach is proposed: Could we start with a full set of data (including already processed data from the pilot counties); with agreement points in place for the data represented in it, and start the WA-Trans process? Meaning contributing partner can start to add their data at their convenience.

What can we do to get a working product sooner?

- Iterative implementation? Seems to fit with the framework concept of continuous improvement over time,
- Tami proposed a compressed schedule – begin statewide implementation upon completion of portals (One-Road Phase I). The biggest impediment to that is getting data sharing agreements for maintenance. Cathy pointed out you have to show the locals a good business reason for them to participate to get agreements signed. We can build it without agreements but maintaining it will be difficult.

Can you build off the concept laid out in the Data Provider business requirements; section 1.7 recognizes Census data as a basis for jurisdictions with poor or no data? This is would still use local

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data as we collect it. Wendy spoke in regards to Census files - attributes are minimal, agreements points are not done, but they are joined by averaging data. Cathy U. would like to find out where census is now. We could show the problems with misalignments that could be helpful. Michaellyn says they will have everything. Cathy's thought is that we could show what was there and what is different. Next few months we will have more and more available. Cathy is looking for something that would not be shared publically but could show what is required. We could use examples of problems with trying to match the existing data on the fly as part of the business case.

- **Action Items:** Find out where Census is and figure out a way to make a case on that. Tami will work with Cathy and Michaellyn to figure out how we could do that.

George doesn't doubt that there are complex issues and time consuming issue regarding integrating data. Can we buy ourselves time by getting something out there sooner that doesn't meet all needs but will show some completion so the plug doesn't get pulled on us (this has NOT been threatened) because it is taking too long.

Ian shared that any project of this scale and scope requires interim products to get us through the process. Ian also shared that CRAB is critical to local government funding support. We need to figure out win-win situation. Ian also thinks we need to get Dept. of Revenue. Spokane County has some issues that they are involved in. There is consistent turn over in their GIS dept.

- **Action Items:** Ian will share with Tami information about this.

There was discussion about how we can develop a deliverable with less scope to simplify it. Tim proposed doing State and County roads only. But many counties can share their city data. This will not meet the WSDOT need. It is critical for WSDOT to understand what kind of earlier implementation might meet their need.

Pat shared how his office could use local roads. Cathy shared that the smaller counties are not yet seeing the tangible benefits. Tami, Michael and Cathy recently spoke at the Washington Chapter of the APWA Conference. They were really interested in the agreement points and how that is working in King and Pierce County. But Cathy's comments on how important this was to Walla Walla County and why were very compelling. Counties need to understand how city roads feed into county roads to understand the system. Mobility does not include city data. Cathy says GASB 34 requires all roads so we might figure out how to leverage this.

- **Action Item:** Tami will lead a group to document an issue paper regarding using Census and local data and what options we would have for this (after the first of the year).
- **Action Item:** Tami will lead a group in WSDOT to determine what has to be in the first implementation. This can be combined with the group that determines what WSDOT needs for state route data before we can negotiate to put it in WA-Trans.

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Metadata

Strategies

Feature level metadata is a goal for a lot of people and a lot of headway is being made. How do we do that and what is the benefit of it? The general plan is to put all the metadata in the database somehow. That way we get the original metadata, changes the data, processes being performed. Some of it will be feature level metadata and some process information. Right now we have contact information and stuff like horizontal accuracy method. Michael has written a strategy proposal that is Appendix A of this document. This discussion is based on this document.

Ian commented that metadata is always a struggle. The more you can integrate it into a business process the better.

Decision – move forward with this strategy.

Disclaimers

The Puget Sound PAC proposed putting the data providers own disclaimer in the metadata that is then downloaded. WA-Trans will also have disclaimer that will be on the download portal.

Decision - This was supported.

Report on Conflation of Mobility Data for King County

Because King County TNET is such a new data set it doesn't yet have the Mobility data from CRAB in it yet. Holly has been doing that work.

There are three data sets: TNET, County Road Inventory, and CRAB King County Road Log. The King County Road Log table fields were changed to work with ArcGIS. Milepoints were changed to feet to fit with the road networks. About 60% of the events in the road log were able to be placed on the County Road Inventory. These events were changed to points and joined to the closest TNET segment to associate them.

By placing points along the County Road Inventory segments and erasing points within a 50 feet distance of the intersections we can join the points to the closest TNET segment to associate each TNET segment with a County Road Index Number. This was QAed by checking each intersection to make sure there was no error in connecting a cross-street and also checked for any point which matched over a 20 foot distance or more. I tried creating an LRS on TNET and using that to locate the Mobility events but it didn't work well because the measures are different. At this point either an event can be placed on a route and 60% of them can be placed on a TNET segment.

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This will be provided to King County for their approval and use in relating Mobility to TNET for long-term maintenance.

Outputs of Multiple Descriptions and Geometries

We can have many descriptions of a road segment. How do we output this data? Which description do we download? If we were to pick one how would we choose it for a standard download? How could/would you get all of them and who would want to know?

Tami wanted to know if you can categorize the type of description by some flag? Michael says right now we can use stakeholder. No there is nothing that says what type it is (ex. State Route, County Road, City Street, DNR Number, etc.)

Cathy U. said there is one legal name for a road (platted name). That is what Walla Walla County uses for the MSEG (Master Street Address Guide). There may be a state route associated with it as well.

Proposals and Options Considered:

- How about a denormalized file that lists all the different options.
- How about providing all of them and having space for all types of names.
- Another option is to identify a default road and then provide a “table of names”.

How about standards for names? This is not something we are looking at because we aren't the data providers and we won't be editing the names.

What is the result? How far are we going to go? With this.

Cathy talks about a separate table that could be linked?

Michael suggests that we explore the possibilities at Pendleton (where we are going to be developing requirements for portals) and report what they come up?

Tami pointed out that we will get requirements at Pendleton at the end of November and then requirements and portal mock-ups would be provided for the January Steering Committee meeting and this is THE chance for the SC to provide feedback before we start building/buying.

One question Michael wanted answered was: “Do we want a graphical interface and the ability to select options?”

Reponse: “Both would be desirable.”

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It might be worth looking at requirements for GIT portal (WAGIC website – link to data portal design document) Jeff Holm. Tami's only concern is that we can't be constrained or held back by that portal effort. Tim is going to work with Tami on this.

- **Action Item:** The next meeting will have significant time devoted to review of requirements from the Pendleton meeting. We will NOT be rewriting a bunch of them but we can review, approve and suggest refinements. Tami will make sure the agenda reflects this.
- **Action Item:** Tami will work with Tim make sure we are aware of the GIT portal activities.
- **Action Item:** Michael will make sure the data user portal requirements include a graphical interface and the ability to select options.

Jurisdictions with No Data: Reports and Plans

Once we have the Census data this should be called "Jurisdictions with no internal data maintenance". Census expects to have data by 2008. We will need to know where they are to select a candidate. Ian reported at length in the action items review on Pend Orielle County.

We think if we get funding that Snohomish County might be the first one we deal with. That is quite an effort but because of where it is might be really useful. Wendy and Michaellyn report that Snohomish is going to be done within a year. It will be a mix of the Everett file and then Harris and/or their subcontractor are driving the rest of the roads. We will continue to monitor this, but it is different if it is Snohomish County and part of the Puget Sound effort than another county.

Next meeting and Action Item Review

We haven't yet scheduled the next meeting. Tami will send an announcement out as soon as that is done. It will be in Seattle and will be on a Tuesday, Wednesday or Thursday from 9 a.m. to noon with video-conferencing will be available from Spokane. Rides will be available from Olympia.

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Appendix A – WA-Trans Metadata Overview Draft Document

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When data is submitted to WA-Trans original provider data is manipulated during translation and integration to meet WA-Trans business requirements, while still retaining the value of the original data. This will also require processes to maintain WAGIC/FGDC compliant metadata information for data in WA-Trans. This document provides an overview of the data manipulations, which directly affect the metadata. To formulate the metadata maintenance processes for WA-Trans some basic business rules for data and metadata are listed below. Items that are part of the WA-Trans Standards are noted with an “*”.

The Basic business rules, which need to be followed and will directly affect Metadata in WA-Trans, are:

1. Metadata must be included with the data submission to WA-Trans *
2. Metadata will be FGDC/CSDGM and WAGIC compliant. *
3. The metadata will be compliant with WA-Trans Standards. There are some minimum metadata attributes required for WA-Trans, which are included in the FGDC/CSDGM and WAGIC standards and their presence will be enforced during data submission. *
4. Provider data will reside in WA-Trans according to WA-Trans standards. *
5. Processes will be performed on provider data for translation and in order to create an integrated statewide dataset in WA-Trans.
6. The WA-Trans metadata given to a data user will be related to the data they have requested and will be WAGIC/FGDC compliant and meet WA-Trans Standards.
7. The metadata submitted by the data providers will be available for download with the data requested by a user. *Note: This will be required in some cases, based on data sharing agreements.*
8. Data provided to a user will reflect the WA-Trans schema.

The above business rules affect the metadata for the provider submitted data and the WA-Trans data. Other factors affecting the WA-Trans data and associated metadata include:

- Any given set of data, requested by a user from WA-Trans, will likely be a combination of data from more than one data provider.
- During WA-Trans translation processes data attribute names and possibly data type will be altered, not affecting the value of the data. Also there will be a removal of some provider attributes and the addition of WA-Trans attributes.
- During WA-Trans integration and conflation processes data submitted may be altered, not affecting the value of the data, but resulting in enough of a change that the resulting WA-Trans metadata file will not reflect the exact information contained in the providers original metadata files.

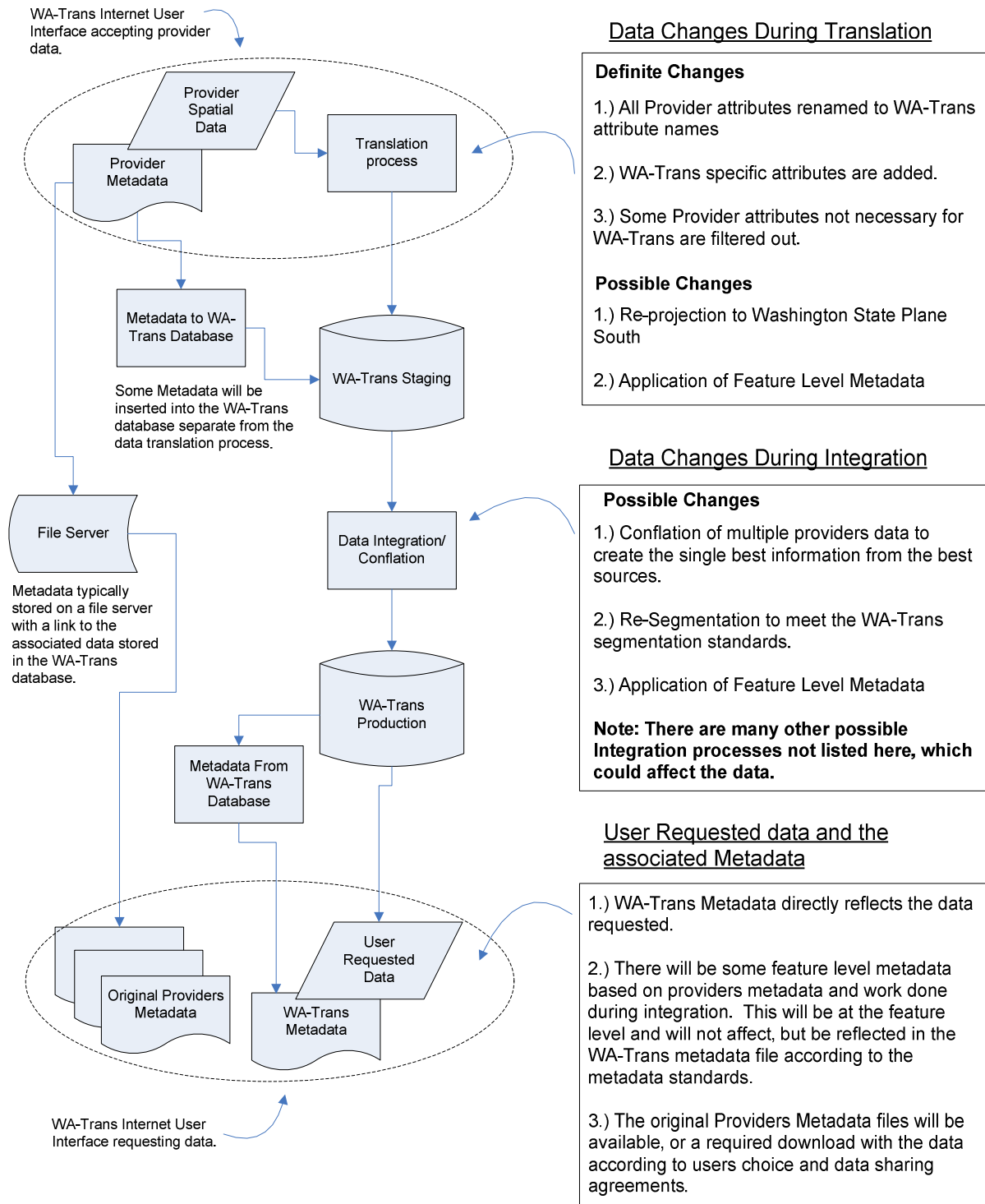
For any data request from WA-Trans there will be two or more metadata files associated with that data:

1. The WA-Trans metadata directly related to the data requested by the user.
2. One or more original provider's metadata directly related to the requested data, prior to WA-Trans translation and integration processes (A user data request can result in several to 50 or more metadata files either directly or loosely related to the requested data.).

See the Diagram on the next page.

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The diagram on this page reflects the current process envisioned for provider data and the associated metadata during the data provider submittal to and integration in WA-Trans. The process envisioned for metadata for a user request is pictured at the bottom of the diagram. This is a very basic diagram

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and omits the Security and QA/QC processes all data will be subject to during submittal, translation and integration.

What we know now, based on the above information, is there are the changes that will occur to provider's data during translation directly affecting the attribute and projection information of the metadata submitted with that data:

1. All provider attribute names will change and possibly even some of the data types will change.
2. The projection for any WA State Plane North data will be re-projected to WA State Plane South.
3. There will be additional WA-Trans attributes added to a dataset. A rough estimate is the number of attributes will increase by about 33% for a feature.
4. Attributes not necessary to WA-Trans will be removed from a dataset. Many of these attributes are related to the spatial file types used to submit data and not necessarily included in the metadata, but some of the attributes are values not stored by WA-Trans.

*NOTE: WA-Trans is not storing the original attribute information in the database so is not able to relate the new attribute names to the original. If WA-Trans stored this information it would add substantial value to the original provider's metadata. (See **Possible Solutions at the end of this document**)*

What we know now, based on the above information, is that these are the changes that will possibly occur to provider's data during integration and conflation, which directly affect the citation sections of the metadata related to that data:

1. Any feature may be a result of conflation of more than one provider's data, especially considering attribution like functional class. This could affect:
 - a. Source of the data
 - b. Horizontal and length accuracy
 - c. Method of gathering the data
 - d. Temporal accuracy
 - e. Contact
2. Manipulation of data during integration may cause these changes to occur and will need to be noted as work performed on the data:
 - a. Any re-segmenting to WA-Trans segment standards
 - b. Addition of Agreement Point information
 - c. Addition of feature level metadata
3. Boundary information related to county, urban areas, tribal nation etc could affect:
 - a. Source
 - b. Method of gathering data
 - c. Temporal Accuracy
 - d. Contacts
 - e. Segmentation
4. With multiple providers and the business rule to use the best data it is possible to have a sets of features in a dataset be from several different providers, e.g. State, County, Tribal Nation and Forest Service. This will affect:
 - a. Source of the data
 - b. Horizontal and length accuracy
 - c. Method of gathering the data
 - d. Temporal accuracy

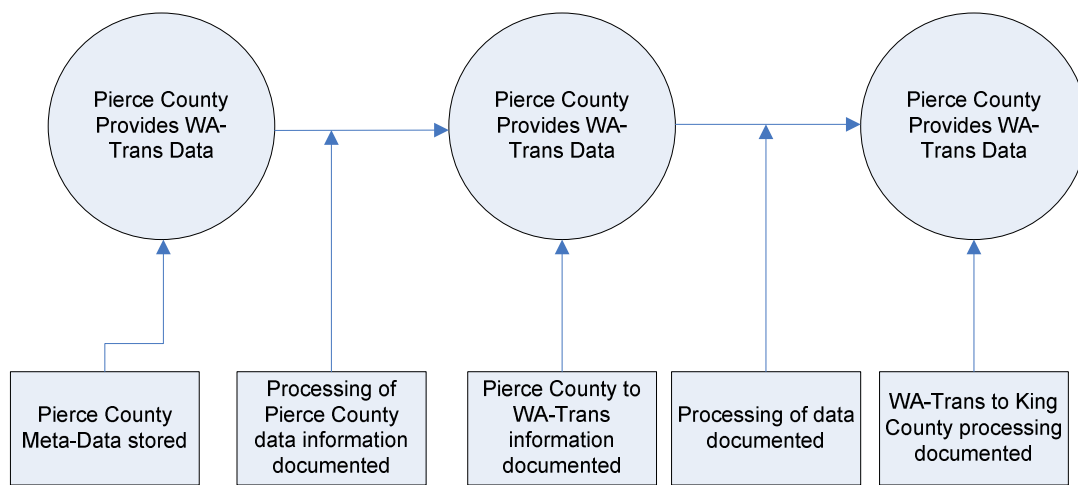
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e. Contacts

When to record changes in Metadata

As data is provided to and processed in WA-Trans there will be constant changes. Some of these changes will be small incremental changes, which do not alter the meaning of the data. Other changes will occur and the question is when does WA-Trans change the metadata information? We need to differentiate between process metadata and data metadata, especially if we are considering feature level metadata. The changes to the metadata will occur at various intervals during the processing of the data. It will be unrealistic to record all changes to the data as this will fill the database log file quite rapidly and record changes in spelling and grammar in addition to the significant changes that should be reflected in the metadata.

A specific order and times to accept changes to the metadata is proposed and is described in the following diagram. The changes described in the diagram are the global, or process changes (e.g. re-projection), which will be reflected in a metadata file.



Other changes, like the feature level data changes, could be recorded at the feature level, such as snapping at an agreement point. The feature level metadata information will be associated with the data feature and not necessarily be included in the metadata file. We would need to determine what changes are necessary to be recorded at the feature level.

Challenges

The changes to the data and resulting changes necessary to maintain a WA-Trans metadata file compliant with FGDC/CSDGM, WAGIC and WA-Trans standards creates some challenges.

1. How will the changes to the data be recorded and more importantly related to the appropriate changes?
2. What constitutes a change that needs to be recorded?
3. How will the appropriate citation information be rendered in the WA-Trans metadata file?
4. Considering the data requests are not previously known, how will a WA-Trans metadata file be created for the requested set of data?

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5. What contact information will be provided in the WA-trans metadata file? *Although a resolution to this was discussed at the last Steering Committee meeting, this item is included to remind us to formalize that solution.*
6. To add value to the original provider's metadata files it will be necessary to map the original attributes to the WA-Trans attributes and to indicate which requested WA-Trans data the original metadata applies to.

Possible Solutions

The following thoughts and possible solutions are put forward for discussion. **This suggestion encompasses a broad scope and a schedule of phases is recommended.**

Example phases could be:

- Phase I, Contact information, application of feature level metadata,
- Phase II, Attribute mapping,
- Phase III, Various Citation information and mixing and matching,
- Phase IV, creation of a dynamic WA-Trans metadata file

It is possible to enter and store the metadata information in the WA-Trans database as tabular data. The new MS SQL database also has a new XML data type, which may facilitate this suggestion.

The suggestion

The suggestion is to simply create a set of tabular tables in the WA-Trans database which would allow the storing of any data, identified in the WA-Trans Metadata Standards, of all data included in metadata files submitted to WA-Trans. (This assumes the associated data from the provider has been accepted by WA-Trans). The stored data would include attribute names from the provider metadata as well as any citation, contact data etc.

What will this allow?

The solutions here are related directly to the above **Changes**, by number.

1. As changes are made to specific data this information can be recorded as a new metadata record and related to the provider's original metadata.
2. What constitutes a change is a rule that still needs to be discussed.
3. The WA-Trans metadata files can be a compilation of the various providers metadata and the changes that have been recorded. This may change depending on the user's request, and can be if the data is stored in the database.
4. Same answer as 3.
5. Since all contact information is stored in WA-Trans this can be provided as agree upon by the providers and WA-Trans.
6. If all provider attribute names and data types were stored as originally provided and mapped to the associated WA-Trans attributes the original provider's metadata file would be of added value. The WA-Trans data could then be easily related to the correct provider metadata information. Coupled with existing feature level metadata this could be a powerful tool for many analysts. The mapping could be performed during the initial data preparation needed before translation to WA-Trans using the data provider interface. Two purposes could be served.
 - a. Mapping data for use and automation in the translation process.

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- b. The ability for a data user to use the provider's metadata file as intended by that provider.